

REMARKS

Reconsideration of this application is respectfully requested.

Claims 1 through 75 have been cancelled to expedite the prosecution of this application.

In regard to the claims, claim 76 is directed to an endovascular prosthesis having a trunk portion and a furcated portion. The trunk portion includes a radially expandable support. An inner layer of fabric at least partially defines a trunk lumen which extends between first and second ends of the trunk portion. An outer layer of fabric at least partially defines an outer side of the trunk portion. The radially expandable support is at least partially disposed between the inner and outer layers of fabric.

In addition, claim 76 sets forth the furcated portion as including at least two branches. The branches have branch lumens which are in fluid communication with the trunk lumen. The inner layer of fabric at least partially defines the branch lumens.

Claim 76 defines over the prior art, and particularly the patents to Kornberg (4,617,932), Pinheiro (5,851,228), Wisselink (5,984,955), White, et al. (6,099,558), and Goicoechea, et al. (6,051,020), by setting forth:

- (1) an inner layer of fabric which at least partially defines the trunk lumen,
- (2) an outer layer of fabric which at least partially defines the outer side of the trunk portion,

- (3) a radially expandable support between the inner and outer layers of fabric.

The prior art does not disclose an endovascular prosthesis having two layers of fabric with a radially expandable support disposed between the two layers of fabric. This results in the inner layer of fabric providing a smooth surface which at least partially defines a lumen through the trunk portion of the prosthesis. In addition, the outer layer of fabric provides a smooth surface which may engage body tissue and extends over the radially expandable support.

In addition, claim 76 further defines over the prior art by setting forth the inner layer of fabric as at least partially defining the branch lumens. The prior art does not disclose an inner layer of fabric which at least partially defines a trunk lumen and at least partially defines branch lumens.

Claims 77 through 90 depend from claim 76 and define over the prior art for substantially the same reasons as does claim 76 and by virtue of the structure and function set forth in these claims taken in combination with the structure and function of claim 76. Specifically, claim 77 sets forth the inner and outer layers of fabric of having a uniaxially oriented fibril microstructures. Although the patent to Kornberg (4,617,932) discloses the use of fabric, there is nothing in the patent to Kornberg which suggests that the fabric will have uniaxially oriented fibril microstructures as set forth in claim 77.

Claim 78 depends from claim 76 and sets forth the inner and outer layers as having a thickness of about 0.1 millimeters.

Claim 79 depends from claim 76 and sets forth the inner and outer layers as being interconnected by sintering. The sintering forms a substantially monolithic covering for at least a portion of the radially expandable support.

Claim 80 depends from claim 76 and sets forth the trunk portion as being formed by a number of sections equal to the number of branches in the furcated portion. The sections of the trunk portion are interconnected by a plurality of seams which extend between the first and second ends of the trunk portion. The prior art does not disclose an endovascular prosthesis having a trunk portion which is formed by a plurality of sections interconnected at seams.

Claim 81 depends from claim 76 and sets forth outflow limbs which extend from the branches and have limb lumens connected in fluid communication with the trunk lumen. Each of the outflow limbs has an inner layer of fabric which at least partially defines the limb lumen and an outer layer of fabric which at least partially defines an outer side of the limb. A radially expandable support for the outflow limb is at least partially disposed between the inner and outer layers of fabric. The prior art does not disclose outflow limbs having inner and outer layers of fabric in the manner set forth in claim 81.

Claim 82 depends from claim 76 and sets forth the radially expandable support as including a plurality of radially expandable stents. The stents are disposed in the trunk portion between the inner and outer layers of fabric.

Claim 83 depends from claim 76 and sets forth a stent as extending from the second end of the trunk portion with at least a portion of the stent spaced from the inner and outer layers of fabric. The stent has surfaces which engage an

inner side surface of a first blood vessel at a location in an upstream blood flow direction of a junction between the first blood vessel and a second blood vessel. The stent spans the junction between the first and second blood vessels. The stent extends downstream past the junction between the first and second blood vessels. The trunk portion is disposed in a downstream blood flow direction of the junction between the first and second blood vessels.

Claim 84 depends from claim 76 and sets forth a plurality of sutures as being connected with the branches. Each of the sutures is connected with an end portion of one of the branches and extends from the end portion of the one branch in a direction away from the trunk portion.

Claim 85 depends from claim 76 and sets forth the radially expandable support as being spaced apart from the furcated portion of the endovascular prosthesis.

Claim 86 depends from claim 76 and sets forth the outer layer of fabric as at least partially defining outer sides of the branches.

Claim 87 depends from claim 86 and sets forth each of the branches as including a rod which extends from a location adjacent to the intersection of the furcated portion to a location adjacent to an end of the branch which is spaced from the intersection. The rod is disposed between the inner and outer layers of fabric.

Claim 88 depends from claim 76 and sets forth the inner and outer layers of fabric as extending from the first end of the trunk portion to ends of the branches which are spaced furthest from the trunk portion.

Claim 89 depends from claim 88 and sets forth the inner and outer layers of fabric as being bonded together.

Independent claim 91 is directed to an endovascular prosthesis having a main section and a plurality of trunk sections. The main section includes a main lumen which extends between first and second end portions of the main section. The branch sections have first end portions which are disposed in the main lumen in the main section. The end portions of the branch sections are enclosed by the main section.

Claim 91 defines over the prior art by setting forth the first end portion of each of the branch sections as being disposed in the main lumen. The first end portions of each of the branch sections is enclosed by the second end portion of the main section.

Claims 92 through 95 depend from claim 91 and define over the prior art for substantially the same reasons as does claim 91 and by virtue of the structure and function set forth in these claims taken in combination with the structure and function of claim 91. Specifically, claim 92 sets forth the main section as including a radially expandable support which is at least partially disposed between inner and outer layers of fabric.

Claim 93 depends from claim 91 and sets forth the first end portion of each of the branch sections as being disposed in engagement with a first end portion of an adjacent branch sections. The prior art does not disclose branch sections having end portions which are disposed in engagement in the manner set forth in claim 93.

Claim 94 depends from claim 91 and sets forth each of the branch sections as including an inner layer of fabric which at least partially defines one of the branch lumens and an outer layer of fabric which at least partially defines an outer side of one of the branch sections. The prior art does not disclose branch sections having inner and outer layers of fabric.

Claim 95 depends from claim 91 and sets forth the main section as including a layer of fabric which at least partially defines the main lumen. Each of the branch sections includes a layer of fabric which is disposed in engagement with the layer of fabric of the main section.

Independent claim 96 is directed to an endovascular prosthesis having: (1) a trunk portion, (2) a furcated portion, and (3) outflow limbs. The trunk portion has a first end which is disposed in engagement with an inner side surface of a first blood vessel at a location in an upstream blood flow direction from an aneurysm. A trunk lumen extends between first and second ends of the trunk portion.

The furcated portion is set forth in claim 96 as having at least four branches which are at least partially disposed in the aneurysm. Each of the branches has a first end connected with the trunk portion and a second end disposed in the aneurysm. Each of the branches has a branch lumen in fluid communication with the trunk lumen.

The endovascular prosthesis is set forth in claim 96 as including at least four outflow limbs. Each of the outflow limbs includes a limb lumen which is disposed in fluid communication with the trunk lumen.

A first one of the four outflow limbs is set forth in claim 96 as extending from the aneurysm into a first common blood vessel. The first one of the at least four outflow limbs extends from the first common blood vessel into a first branch blood vessel. An end of the first one of the outflow limbs is disposed in the first branch blood vessel.

A second one of the at least four outflow limbs is set forth in claim 96 as extending from the aneurysm into the first common blood vessel. The second one of the outflow limbs extends from the first common blood vessel into a second branch blood vessel. An end of the second one of the outflow limbs is disposed in the second branch blood vessels.

A third one of the at least four outflow limbs is set forth in claim 96 as extending from the aneurysm into a second common blood vessel. The third one of the outflow limbs extends from the second common blood vessel into a third branch blood vessel. The third one of the outflow limbs has an end which is disposed in the third branch blood vessel.

A fourth one of the at least four outflow limbs is set forth in claim 96 as extending from the aneurysm into the second common blood vessel. The fourth outflow limb extends from the aneurysm into the second common blood vessel. The fourth outflow limb extends from the second common blood vessel into a fourth branch blood vessel. The second end of the fourth one of the outflow limbs is disposed in the fourth branch blood vessel.

Claim 96 defines over the prior art by setting forth the prosthesis as having four outflow limbs. The first and second outflow limbs both extend into a first

common blood vessel. The first outflow limb extends from the first common blood vessel into a first branch blood vessel. The second outflow limb extends from the first common blood vessel into a second branch blood vessel. The prior art does not disclose two outflow limbs which extend into a common blood vessel and then extend from the common blood vessel into different branch blood vessels in the manner set forth in claim 96.

Claims 97 through 100 depend from claim 96 and define over the prior art for substantially the same reasons as does claim 96 and by virtue of the structure and function set forth in these claims taken in combination with the structure and function of claim 96. Specifically, claim 97 sets forth a stent as having surfaces which engage either side surface of the first blood vessel at a location in the upstream blood flow direction from the aneurysm and from a junction between the first blood vessel and the second blood vessel. The stent has anchor portions which pierce the inner side surface of the first blood vessel. The stent is connected with the trunk portion of the prosthesis at a location in a downstream blood flow direction from the junction between the first and second blood vessels.

Claim 98 depends from claim 96 and sets forth the first one of the outflow limbs as having an outer side surface which engages an outer side surface of the second one of the outflow limbs in the first common blood vessel. In addition, the third one of the outflow limbs has an outer side surface which engages an outer side surface of the fourth one of the outflow limbs in the second common blood vessel. The prior art does not disclose outflow limbs having outer side surfaces which are disposed in engagement in the manner set forth in claim 98.

Claim 99 depends from claim 96 and sets forth the trunk portion as including a radially expandable support which is at least partially disposed between inner and outer layers of fabric. The inner layer of fabric at least partially defines the branch lumens. The outer layer of fabric at least partially defines outer sides of the branches.

Claim 100 depends from claim 99 and sets forth each of the outflow limbs as having a radially expandable support disposed between inner and outer layers of fabric.

In view of the foregoing remarks, it is believed that the claims in this application clearly and patentably define over the prior art. Therefore, it is respectfully requested that the claims be allowed and this application passed to issue. If for any reason the Examiner believes that a telephone conference would expedite the prosecution of this application, it is respectfully requested that the Examiner call applicant's attorneys in Cleveland, Ohio at 621-2234, area code 216. Please charge any deficiency in the fees for this application to our Deposit Account No. 20-0090.

Respectfully submitted,



Richard S. Wesorick
Reg. No. 40,871

CUSTOMER NUMBER: 26,294
TAROLLI, SUNDHEIM, COVELL, & TUMMINO L.L.P.
526 Superior Avenue – Suite 1111
Cleveland, Ohio 44114-1400
Phone: (216) 621-2234
Fax: (216) 621-4072